

Appl. No. 09/987,102
Response dated November 25, 2003
Reply to Office Action of August 27, 2003

Claims 1-24 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,822,309 to Ayanoglu et al. As discussed in more detail below, this rejection is respectfully traversed.

Specifically, Applicants respectfully submit that unlike the embodiments of the present invention as defined in independent claims 1, 9 and 17, the Ayanoglu patent fails to teach or suggest a node (claim 1), adapted for use in a wireless communication system, that is capable of determining *its own mobility*, as well as a method (claim 9) or a computer readable medium of instructions (claim 17) that provides such a node with this capability.

The details of the claims and the Ayanoglu patent will now be discussed.

The present invention provides a system, method and computer readable medium of instructions capable of determining the mobility of a node in a network, such as a wireless ad-hoc network that requires the node to share its information with other nodes, so that the rate at which the node shares this information could be based on the rate of mobility of the node, to thus enable the nodes to share their information with other nodes more economically from a bandwidth usage standpoint. Independent claim 1 defines an embodiment of the present invention as a node that is adapted for use in a wireless communications network and capable of determining *its* mobility. The wireless communications network comprises a plurality of other nodes, at least some of which are stationary. The node is defined as comprising a transceiver and a controller. The transceiver is adapted to communicate or attempt to communicate with at least one of the stationary other nodes in the network. The controller determines a mobility factor *of the node* based on the communication or attempted communication with the stationary other node. The controller then controls a rate at which the transceiver sends information

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pertaining to the node to at least one of the other nodes in the network based on the mobility factor. In other words, the controller *of the node* performs the mobility factor calculation *based on a transmission by the node to at least one stationary node in the network*. Independent claim 9 defines a method including steps for performing these operations, and independent claim 17 defines a computer readable medium of instructions for performing these operations.

The Ayanoglu patent teaches signaling and control architecture for an ad-hoc ATM LAN. The ATM LAN includes a plurality of portable base station (PBS) switching nodes that are coupled together and communicate with each other. As described, for example, in the Abstract, the ATM LAN is capable of performing "mobility management techniques" for handling mobile sign-ons and idle handoffs, to locate mobile users during connection and setup, and to perform handoffs when a mobile is actively involved in a connection.

The Examiner contends that column 4, line 59 through column 5, line 64, column 8, lines 36-57 and column 9, lines 13-42 of the Ayanoglu patent teach the features of the controller as recited in independent claim 1 of the present application as discussed above. Applicants respectfully disagree. Granted, although these passages of the Ayanoglu patent use the term "mobility", Applicants respectfully submit that the "mobility" which the Ayanoglu patent describes does not relate to the "mobility factor" that is determined for a node so that the rate of transmission by that node can be based on that mobility factor as in the claimed embodiments of the present invention. For example, column 4, lines 59-66 state that the issue of "user mobility" is addressed by assuming "(i) slow mobility, for example, walking speed, (ii) distributed control, and (iii) permitted movement through blind spots" so as to "keep the PBSs simple and low cost". On the other hand, column 8, lines 42-47 describe "mobility management" as involving

Appl. No. 09/987,102
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“(i) registrations, to handle mobile sign-ons, and idle handoffs” and “(ii) mobile location procedures during connection setup”. In other words, the term “mobility” in the Ayanoglu patent refers to managing connection and handoff of the mobile user terminals. Applicants respectfully submit that none of these cited passages, nor any other portion of the Ayanoglu patent, teaches or suggests the ability to determine a *mobility factor* of a node *based on a communication or attempted communication by the node with a stationary other node*, and then the ability to control *a rate at which the transceiver sends information pertaining to the node* (in which the transceiver resides) to at least one of the other nodes in the network *based on the determined mobility factor*.

For these reasons, Applicants respectfully submit that the Ayanoglu patent does not anticipate the embodiments of the invention as recited even in independent claims 1, 9 and 17. Furthermore, since the operation of the Ayanoglu network involving “user mobility” is so unlike that of the claimed embodiments of the present invention, Applicants respectfully submit that one skilled in the art would not have found even the embodiments of the present invention recited in independent claims 1, 9 and 17 obvious.

In addition, although dependent claims 2-8, 10-16 and 18-24 are allowable by their dependency on independent claims 1, 9 and 17, Applicants respectfully submit that the Ayanoglu patent fails to teach or suggest the additional features recited in these claims. For example, as demonstrated above, the Ayanoglu patent fails to teach or suggest that the determined mobility factor represents a *rate* of mobility of the node as recited in claims 2, 10 and 18, and that the rate at which the controller controls the transceiver to send the information is *proportional* to the rate of mobility as recited in claims 3, 11 and 19. Column 4, line 59

Appl. No. 09/987,102
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through column 5, line 64, which are cited against claims 2, 10 and 18, are deficient for the reasons discussed above with regard to claims 1, 9 and 17, and column 8, lines 36-57 and column 11, line 1 through column 12, line 10, which are cited against claims 3, 11 and 19, are deficient for the reasons discussed above, and also, because columns 11 and 12 merely describe QoS checking by the PBSs.

Furthermore, the Ayanoglu patent fails to teach or suggest that the communication by the transceiver with at least one other stationary node enables the node to determine its distance to the at least one other stationary node as explicitly recited in claims 4, 12 and 20, and that the *attempted* communication by the transceiver with at least one other stationary node enables the node to determine whether the at least one other stationary node is within a transmission range of the node as recited in claims 5, 13 and 21. Column 13, line 53 through column 14, line 3, which are cited against claims 4, 5, 12, 13, 20 and 21, merely include the statement that information may be routed directly through the two mobiles if they are within listening distance of each other. This passage does not involve a distance check between the node, whose mobility factor is being determined, and a stationary node.

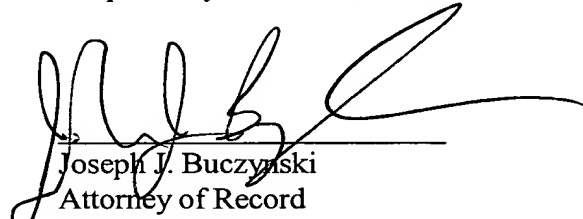
Also, the Ayanoglu patent does not teach or suggest a network having the limitations recited in independent claims 1, 9 and 17 where at least one of its stationary nodes includes a stationary router that is adapted to route data packets which it receives that are addressed to other nodes to those other nodes as recited in claims 6, 14 and 22. Rather, column 6, lines 11-40 involve the routing of ATM cells. In addition, nowhere does the Ayanoglu patent teach or suggest a network having the limitations recited in independent claims 1, 9 and 17 where at least one of the stationary nodes includes an access point that provides the node and other nodes with

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access to another portion of the network and/or another different network as recited in claims 7, 15 and 23, nor does it teach or suggest that such a network having these limitations includes an ad-hoc network as recited in claims 8, 16 and 24. Granted, column 3, line 47 states that the PBSs can employ "and ad-hoc networking layout". However, nowhere does this or any other passage of the Ayanoglu patent teach or suggest that the network has the ability to determine the mobility factor of a node as recited in independent claims 1, 9 and 17, in addition to the features mentioned above as recited in claims 7, 8, 15, 16, 23 and 24.

In view of the above, it is believed that the application is in condition for allowance and notice to this effect is respectfully requested. Should the Examiner have any questions, the Examiner is invited to contact the undersigned at the telephone number indicated below.

Respectfully submitted,



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